

DYNAMICALLY SCALABLE DISK ARRAY

Abstract

5 A dynamically scalable storage system is described. The system includes a first
plurality of disk drives for storing distributed parity groups. Each distributed parity
group includes storage blocks arranged as one or more data blocks and a parity block.
Each storage block is stored on a separate disk drive such that no two storage blocks
from a given distributed parity group reside on the same disk drive. File system
metadata is used to describe a location of each of said storage blocks by specifying a
10 disk identifier and a logical block identifier of a first logical block of each storage block.
A processor manages the file system metadata. The processor recognizes when a new
disk drive is added to the plurality of disk drives and causes one or more existing
storage blocks to be moved to the new disk drive to balance usage of all drives. The
processor also updates the file system metadata.

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